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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/730,199	12/05/2000	Donald J. Kerfeld	10247US01	7264

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EXAMINER	
UHLIR, NIKOLAS J	

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 01/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	Application No.	Applicant(s)	
	09/730,199	KERFELD ET AL.	
	Examiner	Art Unit	
	Nikolas J. Uhlir	1773	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 01 December 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
   (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ they raise the issue of new matter (see Note below);
   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: _____.
3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a)☐ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: *see attached sheet*.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a)☐ will not be entered or b)☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: *none*.
   Claim(s) objected to: *none*.
   Claim(s) rejected: *1;.3-17;20-32*.
   Claim(s) withdrawn from consideration: _____.
8. ☐ The drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.
10. ☐ Other: _____

Continuation of Box 5(c):

The examiner has considered the applicants request for reconsideration but does not find the applicant's arguments to be persuasive. The Applicant argues the following points: 1) The combination of Lewis with Davis is improper because it would "frustrate" the goals of Lewis, as Lewis is directed towards an optical media whereas the proposed modification would result in a magnetic media; 2) One of ordinary skill in the art would have no motivation to make the proposed combination without knowing the applicants disclosure, as Lewis requires the metal layer to be embossable and reflective, and one of ordinary skill in the art would recognize that magnetic layers are typically not embossable or reflective. Contrary to the requirements of Lewis, the magnetic layers of Davis are non-reflective and non-embossable; 3) The examiners statement of the reasons why one of ordinary skill in the art would be motivated to make the proposed modification is fraught with mischaracterizations of the prior art teachings, and contrived statements of motivation. The only motivation to make the proposed substitution comes from the applicant's own specification, not the prior art. Additionally, Davis lacks any teaching or suggestion that surface variations formed in a second layer are preserved in a third layer, as shown by the figures of Davis. In particular, Davis does not show a magnetic layer that conforms to the surface of a patterned second layer; 5) The applicant's are unsure as to what "expectation of success" the examiner refers to in the prior office action, as the only expectation one of ordinary skill in the art would have in making the proposed modification would be to make the goals of Lewis unattainable; 6) The applicants are also unsure of why one of ordinary skill in the art would place a

lubrication layer on the surface of an optical media such as that disclosed by Lewis, as optical media are read by light impinging on the surface of the substrate, and thus a lubricant would serve no purpose; 7) Regarding the claimed requirement of a thin film stack, one of ordinary skill in the art of magnetic media would recognize a thin film stack to mean a combination of sublayers which collectively provide a magnetic recording surface to a medium, and is not akin to the combination of a reflective layer, magneto-optic layer, and protective inlayer asserted by the examiner as equivalent to a thin film stack; 8) The examiner rejected claim 21 by stating that Lewis teaches that the reflective layer can be Cr or an alloy thereof, and Davis teaches the Co based magnetic layer. However, the examiner in the foregoing analysis has substituted the magnetic layer for the reflective layer, thus, there is no reflective layer present. Further, if the reflective layer were substituted back into the structure, the requirements of claim 1 would not be present; 9) With respect to the requirements of a hard disk, the proposed modification of the optical media taught by Lewis with the teachings of Davis to arrive at the claimed hard disk is nonsensical, as one of ordinary skill, knowing the plethora of hard disk options at the time and knowing the optical media are not hard disks, would not have been motivated to modify an optical media to form a hard disk. Further, the substitution of a magnetic head into Lewis would further frustrate the teachings of that reference. 10) The applicant made other arguments that are based upon those arguments recited above and for the sake of brevity will not be repeated.

The bulk of the applicant's arguments labeled 1-5 can be addressed together because they are fundamentally based on the applicant's interpretation that Lewis is

solely directed towards optical recording media. The examiner respectfully disagrees with this interpretation. Though the examples recited by Lewis are clearly optical media, claim 1 of Lewis reads:

> "A multilayered article for use in the manufacture of coded information bearing surfaces which may be electronically decoded comprising: (a) a base having at least one surface which is a layer of thermoplastic, radiation curable polymeric resin, wherein said layer of polymeric resin exhibits a maximum loss modulus which appears between 30 and 180^{0}C., (b) an embossable electrically conductive **or** electromagnetic radiation reflective layer over said at least one surface, said embossable layer comprising a metal having a thickness in the range of 0.2-60nm."

As is clearly shown, Lewis is directed towards a "coded information bearing surface" that has at least one conductive **or** reflective layer, and thus does is not limited to solely optical media. This meshes with other language in Lewis, in particular where Lewis states that the coded information bearing surfaces can be utilized for "such varied uses as.... computer information retrieval systems" (see column 1, lines 14-15), and must be electronically decoded/mechanically read, i.e. by reflected light, by capacitive voltage readout, **and the like**, and converted into electrical signals which may be translated into information which may be directly perceived by a human being (see column 3 line 40 column 4, line 19). One of ordinary skill in the art of recording media would readily recognize from this description that magnetic recording layers, which contain information that must be mechanically decoded, converted into electrical signals, and translated into information that may be directly perceived by a human would apply in this instance. Further, Lewis states that the metal layer, irrespective of whether it is

reflective or conductive, can be made from a group of metals including (among others) Cr, Co, Ni, and alloys of these elements (see column 14, lines 45-60). Given that Cr, Co, and Ni are known to be magnetic elements, Lewis' claim 1, and the description of the function of the coded information bearing layer in the specification of Lewis, it is clear that Lewis is not exclusively limited to optical media as asserted by the applicant. This is further evidenced by the teachings of Davis. Specifically, Davis teaches a substrate having a pattern of grooves, impressions, or bumps, and a "data storage layer" on the surface of the substrate. This data storage layer may comprise any material capable of storing retrievable data, "such as an optical layer, magnetic layer, or more preferably a magneto-optic layer" (see page 26, line 25-page 27, line 4). Suitable materials for forming these layers include but are not limited to Ni, Co, Cr, and alloys thereof (column 27, lines 5-10). Thus, even if one of ordinary skill in the art missed the clearly implied indication that the "coded information layer" of Lewis is not limited to the formation of an optical media, one of ordinary skill in the art certainly would not have missed the explicit reference made with respect to the equivalency of magnetic, magneto-optic, and reflective layers as suitable "data storage layers" in Davis. The applicant's arguments are hinged on the interpretation that Lewis is solely limited to optical media, and that to substitute a magnetic layer for the optical layer of Lewis would frustrate the goals of the Lewis reference. The examiner maintains in view of the positions previously asserted in the prior office actions and clarified above that Lewis is clearly not limited solely to optical media.

With respect to the applicant's argument that magnetic layers would be recognized by one of ordinary skill in the art to be non-embossable and non-reflective and thus not usable in the media taught by Lewis. The examiner finds this argument unpersuasive for 2 reasons. First, Lewis teaches that Co, Ni, and Cr, which are known magnetic materials, are suitable for use in forming the coded information-bearing layer. Further, Lewis teaches that to be embossable, these layers are suitable 0.2-60nm thick (column 14, lines 28-65). The data storage layers (including magnetic layers) taught by Davis can be formed from similar materials as those disclosed by Lewis (Co, Cr, and Ni) and are formed to a thickness "up to about 600 angstroms" (see page 27, lines 1-10). As up to about 600 angstroms is effective 60nm or less, and thus within the range stated by Lewis as being embossable, the applicants argument that magnetic layers are not embossable is not found to be persuasive. As Lewis is not limited solely to optical media, the applicant's argument with respect to the reflectivity of the layer is moot.

With respect to applicant's arguments with respect to the motivation and expectation of success regarding the proposed modification. The examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combinations of disclosures taken as a whole would suggest to one of ordinary skill in the art. Were Lewis solely directed to optical media, the examiner *might* agree with the applicants indication that there is no motivation to combine the references. However,

Lewis is directed towards the formation of a generic coded information-bearing article and is not wedded to any particular means of retaining the coded information on the surface. Thus, it is particularly noted that the Lewis and Davis references are strikingly similar, in that they both are directed towards embossed/patterned polymeric substrates that have a data/information storage layer on the surface of the article, wherein the data storage layer is made of similar if not identical materials in each reference. The applicant is respectfully reminded that substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. Though Lewis only implies that various types data storage layers can be utilized (i.e. those read by radiation, capacitive read out, "or the like"), Davis explicitly states that magnetic, optical, and magneto-optic layers are suitable for use in storing encoded data on the surface of an embossed substrate. Thus, the prior art clearly recognizes the equivalency of these three types of recording layers. Further, one would have had a reasonable expectation that the required functionality of the metal layer, namely as a coded information-bearing layer, would be retained despite this modification.

Regarding the applicant's argument that there is no teaching in the references that the third layer will retain the surface characteristics of the underlayer. The examiner respectfully disagrees, as the figures of Lewis clearly show that the data-recording layer (3rd layer) conforms to the surface variations of the polymer layer (2nd layer).

Regarding applicant's argument as to the motivation behind adding a lubrication layer to an optical media. The examiner respectfully notes that optical, magnetic, and magneto-optic media are known in the art to be read by various types of reproducing

heads. It is further noted that Davis teaches the use of a lubricant layer overtop of a data storage layer, irrespective of whether that storage layer is a optical, magnetic, or magneto-optic recording layer (page 28, lines 1-10). While optical media *may* be read from an optical head that is positioned quite some distance from the reflective layer, typically recording media are read via reproducing heads that are only a short distance (mm to sub microns) from the surface of the media. This short distance arises for different reasons in magnetic and optical media. For magnetic media, it is well known that magnetic fields decrease in magnitude/intensity as the distance from their source increases. Thus, the short distance between a magnetic head and the surface of a magnetic medium is to apply a more intense magnetic field to the medium, thereby increasing read output. With optical media the short distance is less critical, but in many instances the distance between the head and the recording media is in the low microns, with some of the advantages of the short distance being a reduction in weight of the optical head, smaller spot size (which translates to higher recording density) etc. However, when either a magnetic or optical disk is read/recorded, the medium, the head, or both is rotated at high speed during, during which time the distance between the head and the medium fluctuates as a result of various considerations (such as tiny imbalances of the disc weight, uneven surface roughness etc.). A phenomenon known as head slap (referred to on page 28 lines 1-15 of Davis), wherein the read/recording head contacts that medium is a well-known problem in the art of recording media. When the head contacts the recording media surface, the contact can damage or destroy the head. A well known solution to this issue is to form a lubrication layer on the surface of

the medium, as the lubricant layer typically has better frictional characteristics than that recording layer and is thus less likely to damage the head should head slap occur. All of these above assertions are old and extremely well known in the art. References as to these assertions can and will be provided should the applicant request them.

Regarding applicant's arguments as to the interpretation of "thin film stack." the examiner notes that the applicant requires the "thin film stack" to comprise an underlayer, a magnetic layer, and a protective layer. As set forth in the prior office actions, the examiner rejected these limitations by stating that it would be obvious to form a magneto-optic layer and a protective layer in that order as taught by Davis over the reflective layer taught by Lewis, as Davis teaches that a magneto-optical medium (capable of performing the functions taught by Lewis) is suitably formed by forming a magnetic layer and protective layer over a reflective layer. If Lewis were solely limited to optical media, the examiner might agree that this modification would destroy the Lewis reference. However, this is not the case. Thus, as the resulting structure formed by Lewis as modified by Davis has an underlayer (the reflective layer), a magnetic layer, and a protective layer, and thus meets the structural requirements of the thin film stack as recited in claim 20, the examiner finds the applicants argument unpersuasive.

Regarding the argument that as to claim 21 (labeled argument #8 above). The examiner does not understand the applicant's argument. Though there are issues with the dependency of claim 21, it clear that claim 21 is meant to depend from claim 20, which in turn depends from claim 1. In claim 20, the third layer is a thin film stack that comprises 3 layers, an underlayer, a magnetic layer, and a protective layer. Thus claim

1 has clearly been modified in that the specific third layer in the medium of claim 20 is no longer a magnetic layer, it is the underlayer in the thin film stack. Thus, the structure required by claims 20 and 21 don't require the specific third layer to be a magnetic layer. Rather, the 4th layer is required to be the magnetic layer. The rejection of claims 20 and 21 is independent of the rejection of claim 1, and is based on the modification of the structure of Lewis with the teachings of Davis, namely by forming a magneto-optical layer and a protective layer as taught by Davis over the reflective metal layer taught by Lewis. Thus, the applicant is correct is asserting that the modification utilized for claims 20 and 21 wouldn't meet claim 1 alone, as claim 1 requires a completely different structure than claims 20 and 21.

Regarding the applicant's arguments with respect to the requirement of a hard disk. These arguments are fundamentally based on the applicant's incorrect assertion that the media of Lewis is solely limited to optical media. As this is not the case, these arguments are not persuasive.

NBU

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